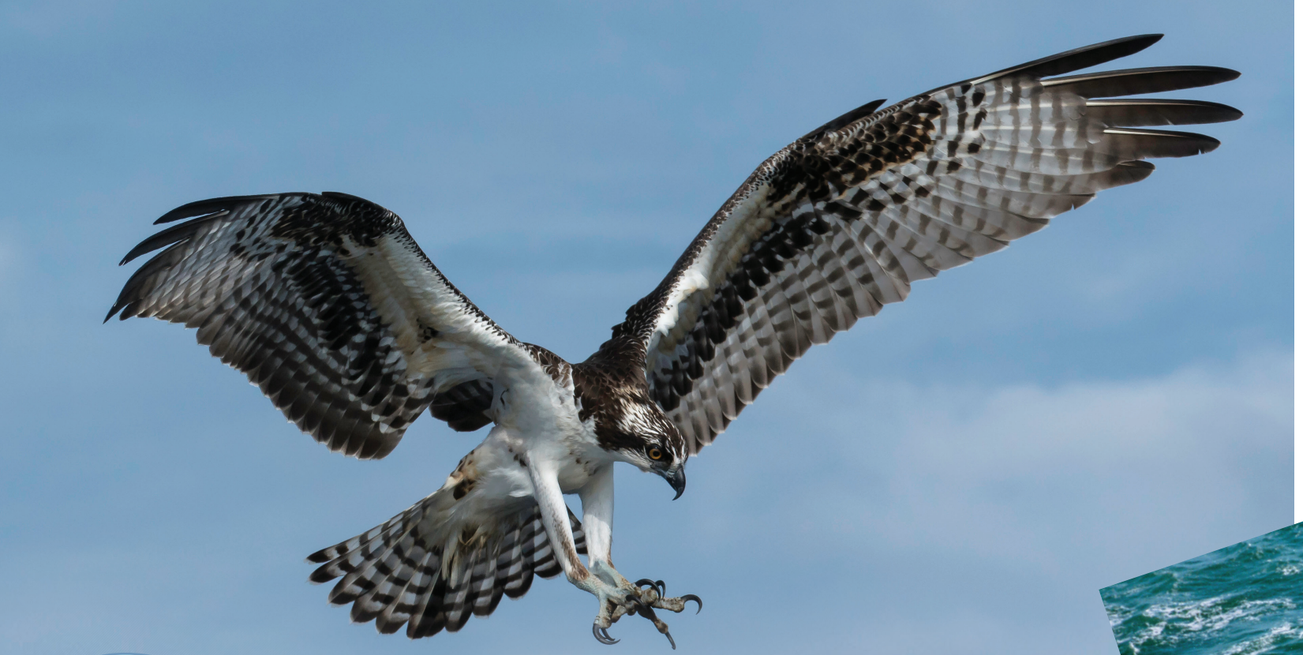


Sea Trial
A Tale of Past and Present
Voyaging

An ocean-going osprey we met a thousand miles from land.

By Linda and Steve Dashew, New York Station

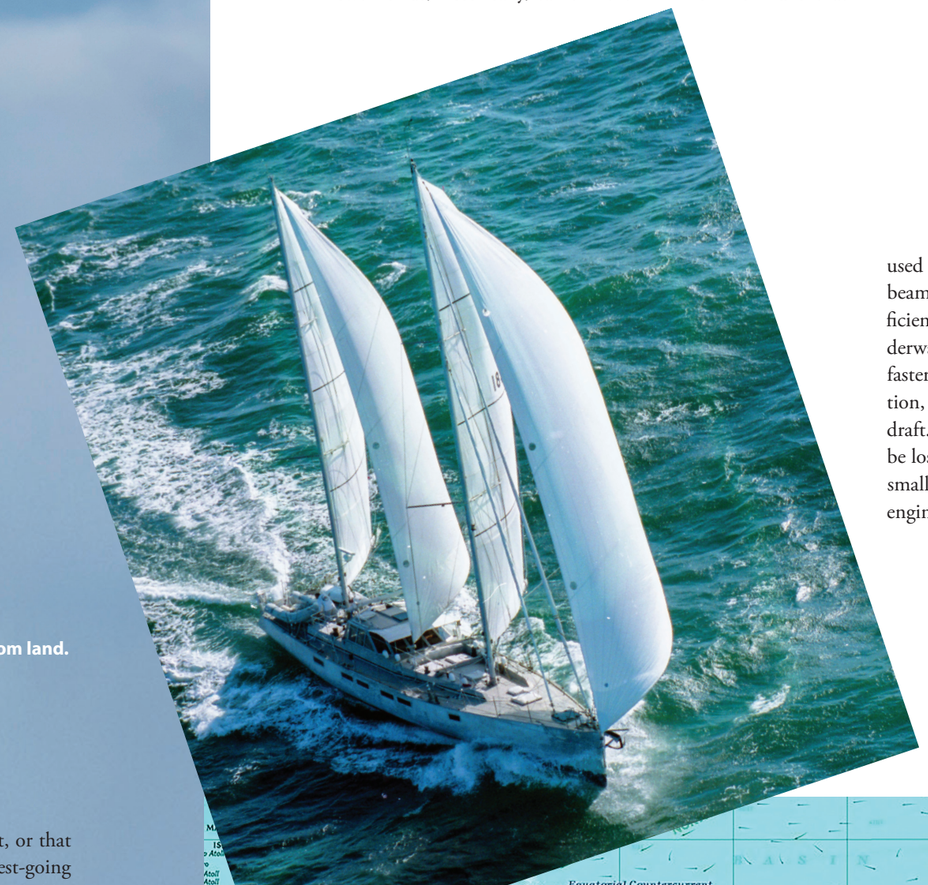
We are 1,100 nautical miles from Flamenco Marina on the Pacific side of the Panama Canal. The breeze is behind us for the first time in almost 6,000 nautical miles. Thirty days ago we were partaking in the wonders of Fiji, and now we are within four days of the canal. The crew of FPB 781 *Cochise* is comfortable, rested, and enjoying this voyage.

As unlikely as the preceding sounds, the bird circling us is even more unusual than the route we are taking. My wife Linda and I both recognize that this is no ordinary sea bird, but we simply cannot come to grips with what we know it to be. It is an apt metaphor for this time and place in our lives.

Fiji to Panama? You might think that's a misprint, or that we are crazy. It is dead upwind against the prevailing west-going current. Almost as unbelievable as the huge talons extended by this "sea bird" trying to grip the port boom topping lift on *Cochise*.

We've been fooling around with yacht design for more than 50 years now, cruising yachts for the last 40. We have learned that yacht design is, at its foundation, the art of compromise. Race boats are easy; there are always the rules against which you are working. Designing for long-distance cruising is far more difficult. For us this begins with safety, boat speed, and sustainability, all of which have to be factored into the plans. And then comes the big one — draft. Boat speed and draft are synonymous, but "excess draft" limits where you can go and can be a major safety impediment. We've been aground several times in remote places where, with another six inches of draft, we would still be there. Our personal target is usually six feet fully loaded.

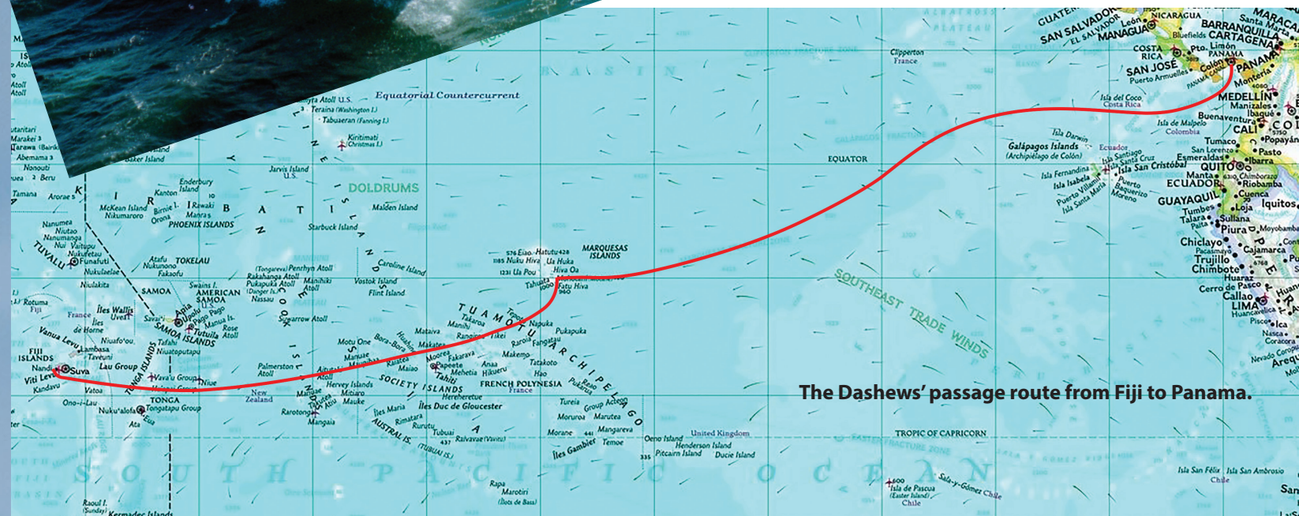
At the other end of the equation, we want to be able to work off a lee shore in a real blow with breaking seas. The answer for us, historically, came in the form of hulls that



Beowulf at the start of the Caribbean 1500. The five-day, three-hour mark she set – with motoring allowed – still stands as the record. Of all our sailboats she was the favorite.

> "We've been fooling around with yacht design for more than 50 years now, cruising yachts for the last 40. We have learned that yacht design is, at its foundation, the art of compromise."

used most of their length for waterline and were of moderate beam, coupled with a modest-sized rig that could be used efficiently by a short-handed crew. By pushing some of the underwater hull volume into the ends of the boat, we could go faster with less drag. A side benefit was a slightly flatter midsection, which allowed for a longer keel span within the limited draft. The negative came in light-air sailing, where we could be losing as much as four to six miles per day — but this was a small price to pay for the benefits received, especially where the engine would be used in light airs anyway.



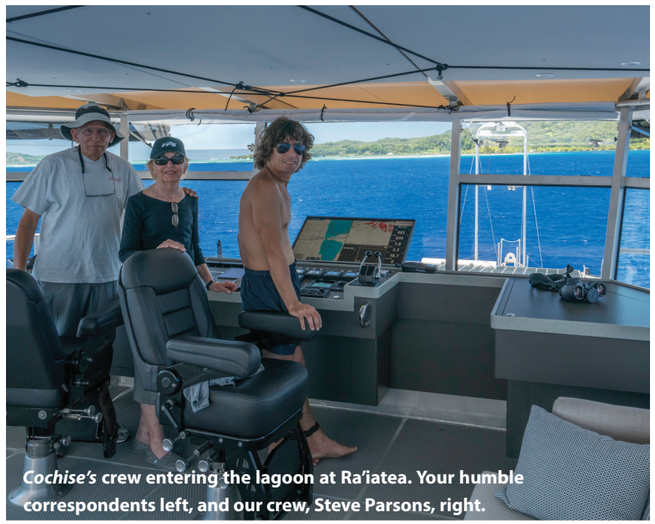
The Dashews' passage route from Fiji to Panama.

***Beowulf* with her trade-wind cruising rig. Being an apparent wind machine, she used an articulating bowsprit and full-width travelers for main and mizzen control. She was very well behaved, and only once did we have to cut away a spinnaker.**

> "Having spent an entire lifetime heaping epithets upon powerboats and their operators, this decision to investigate voyaging without sails was not taken lightly. But when we looked at the benefits that might allow us to continue voyaging in our dotage, we were seduced into proceeding."

With our first attempt at an optimized-for-short-handed-voyaging yacht, the 62-foot cutter *Intermezzo II*, we found an acceptable formula with a loaded draft of five feet nine inches, and waterline half entry angle in the 17-18 degree range. We knew we wouldn't be winning any races on handicap with these proportions, but that was not the goal. *Intermezzo II* was comfortable enough that a long beat up the East Coast of the United States in a northeast breeze was an acceptable proposition. *Intermezzo II* would average 170 miles a day upwind, and close to 200 miles per day off the wind in the trades. Our first long passage, from Cape Town to Antigua, was exceptionally comfortable, taking just under 30 days for the 6,000 miles.

A series of yachts for like-minded cruising friends followed, with narrower forward waterlines and rounder sections. We were gradually pulling volume out of the middle of these yachts and adding it to the overall length. This increased usable interior volume, as well as paying dividends



***Cochise's* crew entering the lagoon at Ra'iatea. Your humble correspondents left, and our crew, Steve Parsons, right.**

at higher speeds with increased waterline length. The benefits, in terms of average passage times, were substantial. We were now counting on 185–235 miles per day compared to 164–180 when we first started cruising.

With the 68-foot ketch *Sundeer*, we took this design approach to an extreme, searching for even more upwind comfort. Indeed, *Sundeer* was a very pleasant ride in all types of sea states. We brought her from Nuka Hiva in the Marquesas Islands to southern California, a sailed distance of 2,880 nautical miles, in 16 days. But we gave away performance in the upper speed ranges to achieve this comfort. After a relatively quick 20,000 miles with *Sundeer*, we felt a somewhat lighter configuration with just a touch more volume in the ends would be optimum, and the *Sundeer* production series followed.

The 78-foot ketch *Beowulf* took us to the edge of the tolerable comfort spectrum, insofar as upwind passages were concerned. A very fine half entry angle of 11 degrees, coupled with up to three tons of water ballast and an eight-foot draft, worked well with her 56,000-pound (loaded for cruising) displacement. So well, in fact, that almost half the 20,000 miles we did with her were upwind. *Beowulf*s ability to rack up the miles downwind — 300 miles per day was the norm for the two of us — often made it possible to take advantage of weather events that turned what otherwise would have been upwind trips into a more advantageous wind angle. The Marquesas to San Diego in 12 days and three hours, where just 18 hours were hard on the wind, springs to mind as an example. Honesty requires that we include a passage from Panama to Curacao, which remains the family standard for unpleasant conditions. (Regardless of which direction we headed, the wind always shifted directly onto the nose). Winds of 25–35 knots and short, steep seas were served up as a reminder not to mess with Christmas trades.

It was a broken main boom while dealing with an unforecast hurricane off the coast of Mexico that got us thinking about … heresy. The dark side. Running off at speed with the spiral bands of a hurricane in the center of your radar will sometimes make you think strange thoughts …

Having spent an entire lifetime heaping epithets upon powerboats and their operators, this decision to investigate voyaging without sails was not taken lightly. But when we looked at the benefits that might allow us to continue voyaging in our dotage, we were seduced into proceeding.

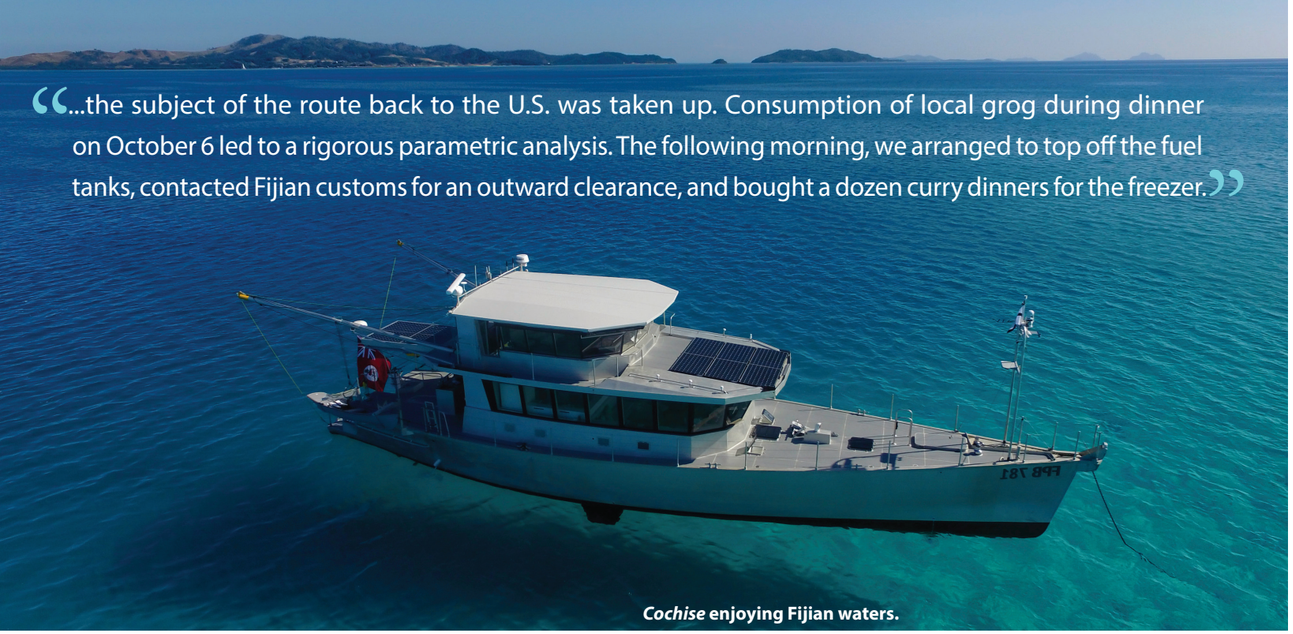
Realizing most other CCA-ers have probably grown up with similar feelings of ill will toward the sail-less crowd, we will let you in on a closely guarded secret: The acronym FPB, by which these un-sailboats are known, does not stand for functional, fast, or fine power boat. The true meaning can be determined by process of elimination, and this clue: the fourth letter of the first word is a rectangular flag made up of yellow and blue squares.

True sailors will be dubious of course, which is as it should be. But the potential comfort and boat speed that might come from a rig-less version of our sailboats — half entry angles at 10 degrees, very narrow waterline beam (since sail-carrying stability is not required), and sufficient waterline to move at 260 miles a day while sipping diesel — held our interest. And so, a dozen years ago, FPB 831 *Wind Horse* came to be. Comfort and quickness coupled with ease of handling combined to entice us to numerous upwind destinations, even while enduring a certain level of self-loathing for designing, building, and voyaging these creatures.

Sixty thousand nautical miles followed in seven years of part-time cruising, wherein *Wind Horse* averaged 11 knots overall at seven gallons of diesel per hour, inclusive of all auxiliary power requirements. So there seemed to be something to this so-called dark side. But then we were forced out of retirement to work on several other FPB projects — a part of the Faustian bargain with which we had saddled ourselves.

Where the preceding FPB hull designs were riffs on our sailboats, FPB 781 *Cochise* is very much a new breed. There is significantly more displacement on a similar waterline length, with a hull shape that minimizes wetted surface. The ends of the hull are both deeper and narrower.

73-foot cutter *Deerfoot II*, and what was probably the first mainsail roach past the backstay. A mistake that was to become a big step forward in cruising rig performance.



***Cochise* enjoying Fijian waters.**

Cochise was launched on June 10, 2016, in New Zealand. Initial sea trials had gone well, so with basic items checked out we decided on a quick visit to Fiji to test the air conditioning and fridge systems in a warmer environment than the miserable winter we were having in northern New Zealand. The 1,100-nautical-mile ensuing passage was uneventful, and within a few days of arrival we knew we were OK systems-wise. To be sure, we dallied in the lovely Fijian winter weather. But four weeks into this extended period of sea trials, we began to think of ways we might put *Cochise*'s weatherliness to work. Of the many options, the one which appealed the most was an early return to the States. A promising basketball season was quickly approaching in the U.S., and we began to consider the route options between Fiji and both East and West coasts of the United States. The West Coast was one with which we were very familiar. But we were now thinking about a return to Greenland and Svalbard, so the East Coast of the U.S. would be ideal.

We can stand just about anything motion-wise for a couple of thousand miles. But Fiji to Panama? That's in excess of 6,000 nautical miles.

Cochise was anchored in Port Denarau harbor. While ashore visiting friends with whom we had buddy-boated halfway around the world, the subject of the route back to the U.S. was taken up. Consumption of local grog during dinner on October 6 led to a rigorous parametric analysis. The following morning, we arranged to top off the fuel tanks, contacted Fijian customs for an outward clearance, and bought a dozen curry dinners for the freezer. On the afternoon of October 8, we were outside the pass at Cloudbreak, the renowned surf spot, watching the locals playing in triple overhead (20-foot-plus) surf, after which we pointed our nose into the northeast trades and began our quest towards Panama.

With all of the hype about long-range weather forecasting you'd be excused for believing forecasts 24 hours out. However, we have learned to take all forecasts with a degree of skepticism. Within 24 hours it is blowing a steady 25 to 35 knots, 50 knots in the squalls, and of course we are in the middle of the Lau island group and its reefs.

Surfer at the legendary Cloudbreak, Fiji.

Once clear of Fijian waters, the weather settled down to a steady 12–16 knots out of the east-northeast on our nose. With just a single wave system to contend with, *Cochise* finds an easy rhythm at 10.75 knots. The bow drops on the occasional square back, and then lands with a soft swoosh.

We are used to doing passages by ourselves, but the advent of maturity and pressure from the family has us trying out crew for the first time. We are accompanied by Steve Parsons, a professional sailor with vast Southern Ocean and South Pacific experience. This allows us the luxury of three hours on and six hours off for watches.

Seven days after leaving Fiji, Bora Bora is outlined off the port bow, and then the pass into Ra'iatea's central lagoon is behind us. Clearance is quickly obtained from the gendarmes, and after a slight delay we have our duty-free fuel permit. A dinner out, a long walk, and we are ready to go again. We move to the fuel dock and begin to load up.

Cochise carries a lot of fuel, 4,700 gallons in tanks which are integral with the hull, forming in effect a double bottom. The tank tops go from hull-side to hull-side with air vents on the port side. We heel the boat to starboard by running the dinghy out on its boom to make sure the tanks can expel all air and are 100 percent filled.

Having a pretty good idea of the fuel *Cochise* burns in varying wind and sea states, we estimate that at 10.5–11 knots we should have at least a 15 percent fuel safety factor for a direct shot to Panama. We can always add fuel in Atuona in the Marquesas Islands, or stop in the Galapagos, but the direct route is cleaner and simpler. If the weather gets worse, we anticipate range can be extended by slowing down. The big question is ocean currents. How much will we lose (or gain!) by trying to harness equatorial countercurrents?

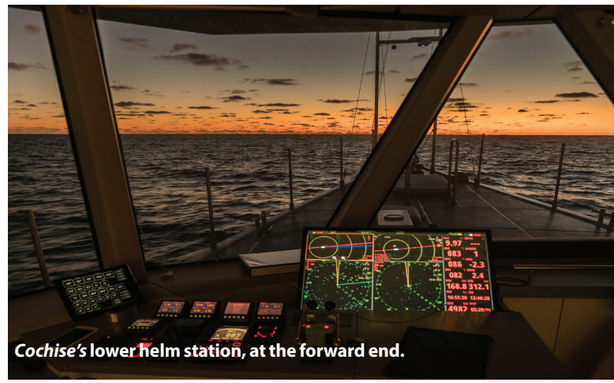
Friday, October 16. *Cochise* slips quietly out the pass at Ra'iatea with her crew of three looking forward to being at sea again. A few hours later and Huahine, our favorite island in the Societies, is to leeward, a lagoon's width distant from the massive surf breaking on the outer reef. We are tempted to stop, but the paperwork drill and our curiosity about the remainder of the voyage keep us pressing on. And then what turns out to be a 50-pound wahoo hits our newly acquired "meat line" and we are distracted from thoughts of tropical idylls.

Cochise has two watch standing areas. Offshore we use either the forward end of the great room or the upper deck. Where short-range visibility is critical, when we are working our way through coral, ice, or lobster traps, the height provided by the enclosed flying bridge makes it the place for keeping a close eye on the sea's surface.

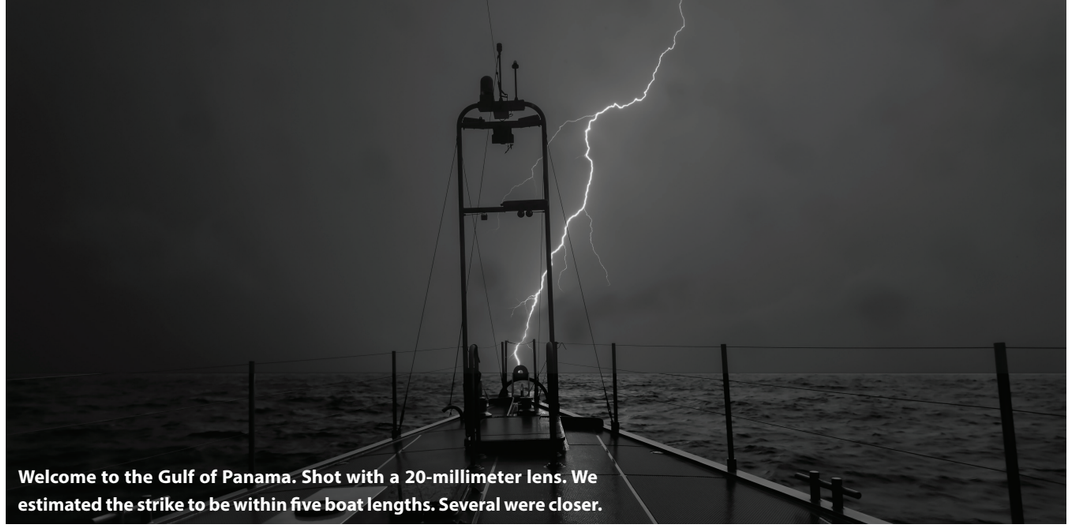
In the olden days, when we were sailors, keeping the boat moving at its best required 100 percent concentration. When we weren't trimming or changing sails, we were noodling the weather. Between GRIB files, polar plots, waves, and currents, picking the best course took all the available bandwidth between our ears. With a powerboat like *Cochise*, we can easily average an 11-knot up or downwind VMG, but we are still working the weather. In this case we are looking for the lightest headwinds and smallest hit or best push from the current.

At least four times a day, we check fuel consumed by each of the 230-horsepower John Deere diesels. This data comes from the engine computers and has proven very accurate. At the same time, we make a log entry and place a waypoint on the chart. With distance run and fuel burned, we get gallons per nautical mile for that segment of the trip. This includes parasite loads such as hydraulics, the stabilizers, and electrical loads, as well as the effects of windage and rough water drag. On the passage to Panama, we are using about .85 gallon per nautical mile. Take the distance to go and the fuel left with which to do it, and we know where we stand. If we have extra reserve we can save it, or speed up a bit and trade time at sea for some extra fuel burn. Or, if we are nervous, slow down and extend our range.

On October 22, we adjust course slightly to the southeast to coast along the reef edge of the uninhabited island of Tiki in the Tuamotu archipelago. We visited here 39 years ago with a boatload of visitors from nearby Takaroa. With the anchor set on the edge of the barrier reef and nothing but the wind holding us off the coral, this was not the most restful stop. But the fresh fish and coconut crabs caught by our passengers made for wonderful eating.



***Cochise's* lower helm station, at the forward end.**



Welcome to the Gulf of Panama. Shot with a 20-millimeter lens. We estimated the strike to be within five boat lengths. Several were closer.

The next day we note that Fatu Hiva, the easternmost of the Marquesas Islands, is just 45 miles north of our course. The best pamplemousse on the planet for four hours? We send an email to vessel control in Papeete, advising them of a short maintenance stop.

Three days later and we're approaching Fatu Hiva, its stark outline slowly filling in with vegetation until we can see the goats climbing unimaginably steep trails. And then the anchor chain sings its happy song as our 340-pound Manson Supreme anchor finds the bottom. After things cool down in the engine room, we will give it a thorough check. In the meantime, we trade with the locals for pamplemousse and bananas and settle in for the night.

Departing Fatu Hiva around its north side, we hook a 50-pound mahi mahi and then another big wahoo. With the freezer now full of fresh fish, the meat line is retired.

Progress toward Panama varies with current. Some days we lose an average of .25 knots per hour, other times it is 1.5 knots down the drain. And occasionally we even have a slight gain. Our speed through the water is averaging 11 knots. Speed made good is right at 10.

It is hard to explain just how comfortable *Cochise* is making us. For most of this trip, the wind and waves have been within 20 degrees of the bow. Sitting in the great room, watching the oncoming seas, and feeling the combined speeds of the waves and *Cochise*, you brace for the inevitable impact, but it does not come. Yes, the bow does lift a bit, and then there is the back of the wave, and the hull does drop into the trough, but it does this softly, with a swoosh rather than a smack. Rarely are the decks wet and there is little salt accumulation on the windows.

We come back now to the unusual visitor who has finally made his landing on the port boom. Sea birds do not have talons like these, and there is only one raptor of which we are aware that carries its prey head-forward to streamline air flow. Welcome aboard, señor osprey. What he is doing out here is his secret. He spends a few hours with us, and then flies off.

Bay of Virgins, Hanavave, Fatu Hiva: still a favorite after three visits over 40 years.

Seventy-two hours of mostly fair wind and seas, courtesy of a tropical disturbance on the Caribbean side of Panama, and the marina at Flamenco Island lies just beyond tomorrow's sunrise. We sit around the table having dinner, keeping watch through windows that provide almost 360 degrees of visibility. We are comparing passages as this one winds to a close. Steve Parsons talks about the trips he's made to South Georgia and Antarctica. Linda and I submit two Cape Town to the Virgin Islands passages, a year apart. These are of comparable length to what we have just achieved, but downwind. The first time was 37 days at sea, the second 30, as previously mentioned. And none were anywhere near the comfort level of this upwind voyage.

As if to teach us a bit of humility, the weather gods in the Bay of Panama turn on their lightning machine. We have numerous nearby strikes, but no damage occurs. And then the clouds clear as the sun rises, revealing anchored ships awaiting their turn through the canal. Flamenco radio advises that we are to proceed to Flamenco Marina and await clearance.

By 0830 customs have departed, the Q flag is removed, and the engines have cooled down. With 11,000 miles now on the GPS, sea trials are officially complete. It is time to start cruising. ✧

About the Authors:

Linda and Steve Dashew have authored eight books about yacht design, construction, seamanship, and voyaging. They and their children are pictured here in Bora Bora in 1977 aboard *Intermezzo*. (Note the banana stalk in the background.) More than 300 of their articles have appeared in major magazines around the world. Sixty-six of their yachts are out cruising. FPB 78-1 *Cochise* is the first of this series, of which three are now completed. Linda and Steve have recently retired so they can devote themselves full time again to cruising. Their four most recent books are available for free download. To get your copies of *Offshore Cruising Encyclopedia, Mariners Weather Handbook, Surviving the Storm,* and *Practical Seamanship,* visit SetSail.com.